# Integrity Testing Performance Analysis in Embedded Systems using IDI

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**Abstract***: Multiple modules that interact with one another to exchange data make up embedded systems. Incorrect resource data exchanged between modules might cause anomalies or mistakes in operation. Resources that interact create dependencies between two modules, such that modifications made to one module's resources will impact modifications made to another module's functionality. Interaction errors between modules are one of the main causes of severe software failures, according to several embedded system investigations, such as those conducted on aerospace or automotive systems. Interaction testing is therefore a crucial step in minimizing risk and reducing interaction errors. When modules interact both directly and indirectly, interaction failures arise. Indirect interactions occur beneath the interface, where a data reliance relationship with resources may lead to an unexpected result.*

**Keywords**: embedded systems.